

DEPARTMENT of ENVIRONMENTAL SERVICES
Water Division - Watershed Management Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: BEAVER LAKE	Lake Area (ha): 54.07
Town: DERRY	Maximum depth (m): 14.0
County: Rockingham	Mean depth (m): 5.0
River Basin: Merrimack	Volume (m ³): 2707500
Latitude: 42°54'23" N	Relative depth: 1.7
Longitude: 71°17'49" W	Shore configuration: 2.23
Elevation (ft): 287	Areal water load (m/yr): 20.72
Shore length (m): 5800	Flushing rate (yr ⁻¹): 4.10
Watershed area (ha): 2331.0	P retention coeff.: 0.47
% watershed ponded: 0.6	Lake type: natural w/dam

BIOLOGICAL:

21 January 2000

29 June 1999

DOM. PHYTOPLANKTON (% TOTAL)	#1	ASTERIONELLA 55%	CERATIUM 40%
	#2	FRAGILARIA 40%	SYNURA 25%
	#3		
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (µg/L)			4.57
DOM. ZOOPLANKTON (% TOTAL)	#1	NAUPLIUS LARVA 34%	NAUPLIUS LARVA 24%
	#2	POLYARTHRA 21%	DAPHNIA 19%
	#3	KERATELLA 16%	CALANOID COPEPOD 14%
ROTIFERS/LITER		30	23
MICROCRUSTACEA/LITER		37	57
ZOOPLANKTON ABUNDANCE (#/L)		67	94
VASCULAR PLANT ABUNDANCE			Common
SECCHI DISK TRANSPARENCY (m)			3.6
BOTTOM DISSOLVED OXYGEN (mg/L)		11.1	0.5
BACTERIA (E. coli, #/100 ml)	#1		
	#2		
	#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m):	5.4
Hypolimnion volume (m ³):	426500
Anoxic volume (m ³):	354000

CHEMICAL:

Lake: BEAVER LAKE

Town: DERRY

	21 January 2000		29 June 1999		
DEPTH (m)	3.0	9.0	2.0	6.0	10.0
pH (units)	7.0	6.9	7.2	6.6	6.5
A.N.C. (Alkalinity)	14.6	15.3	14.4	14.2	17.0
NITRATE NITROGEN	0.24	0.24	< 0.05		0.06
TOTAL KJELDAHL NITROGEN	0.28	0.36	0.80	0.50	0.50
TOTAL PHOSPHORUS	0.009	0.010	0.009	0.012	0.014
CONDUCTIVITY (μ mhos/cm)	174.6	182.1	182.9	177.4	178.5
APPARENT COLOR (cpu)	35	35	19	22	34
MAGNESIUM			1.78		
CALCIUM			11.9		
SODIUM			20.2		
POTASSIUM			2.48		
CHLORIDE	38	39	40		37
SULFATE	12	12	9		9
TN : TP	58	60	89		40
CALCITE SATURATION INDEX			1.9		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1999

D.O. S.D. PLANT CHL TOTAL CLASS

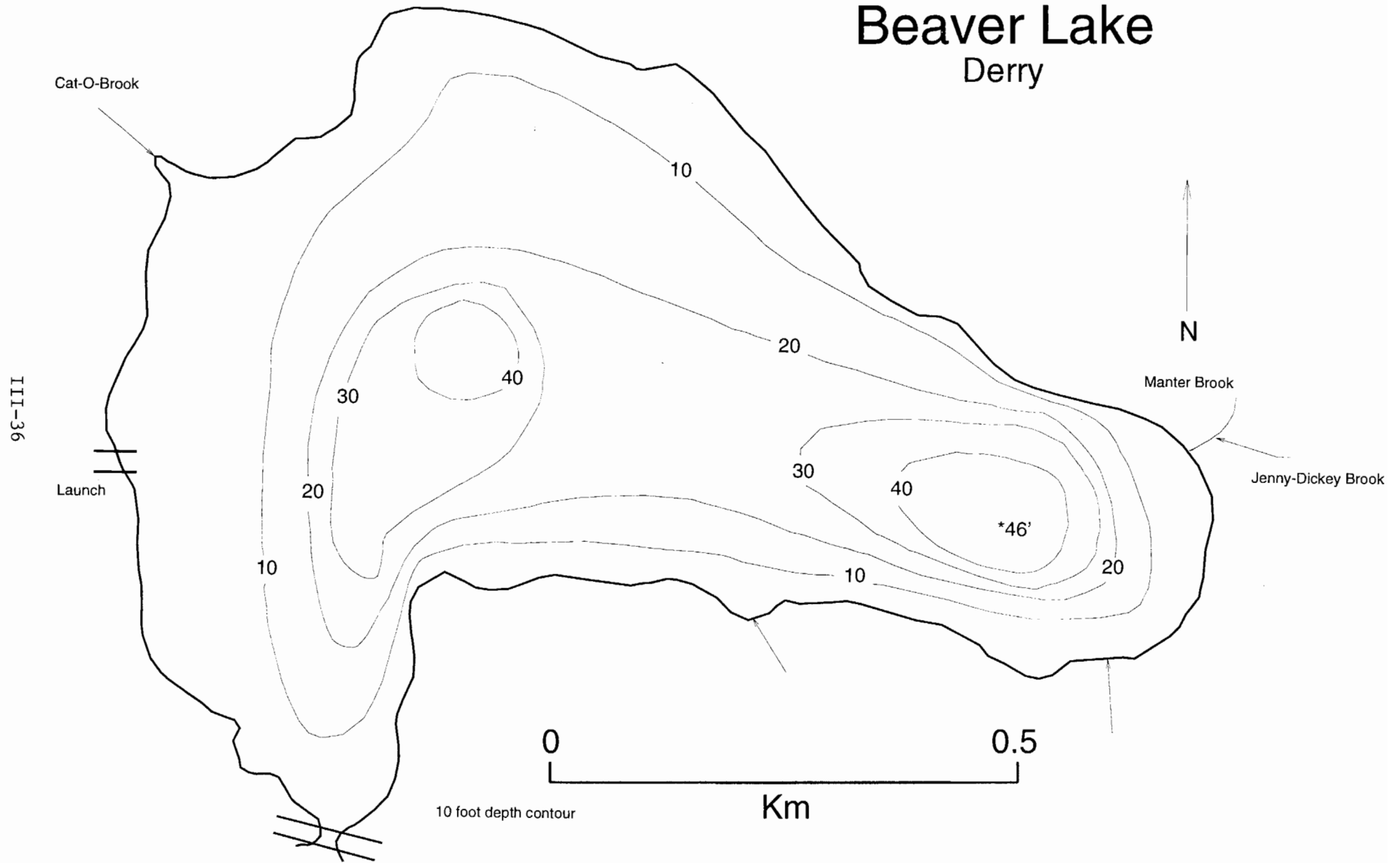
6	2	3	1	12	Meso.
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COMMENTS:

1. Beaver Lake was previously surveyed and classified in 1977, 1984 and 1985, was the subject of a diagnostic/feasibility study in 1990-91 and watershed restoration work in the mid-1990s, and participated in the UNH lay monitoring program in the mid-1980s and in the DES volunteer lake assessment program since 1990. In general, the lake has remained relatively stable in terms of biological productivity over this time period and classed at the meso-eutrophic border (one additional trophic point in 1999 would have placed Beaver Lake in the eutrophic class).
2. This is a somewhat urban pond with high ion and conductivity values. Sodium and chloride values suggest road salt runoff into the pond.

Beaver Lake

Derry



[illegible]

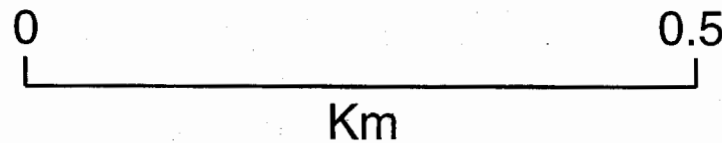
Beaver Lake

Derry



Manter Brook

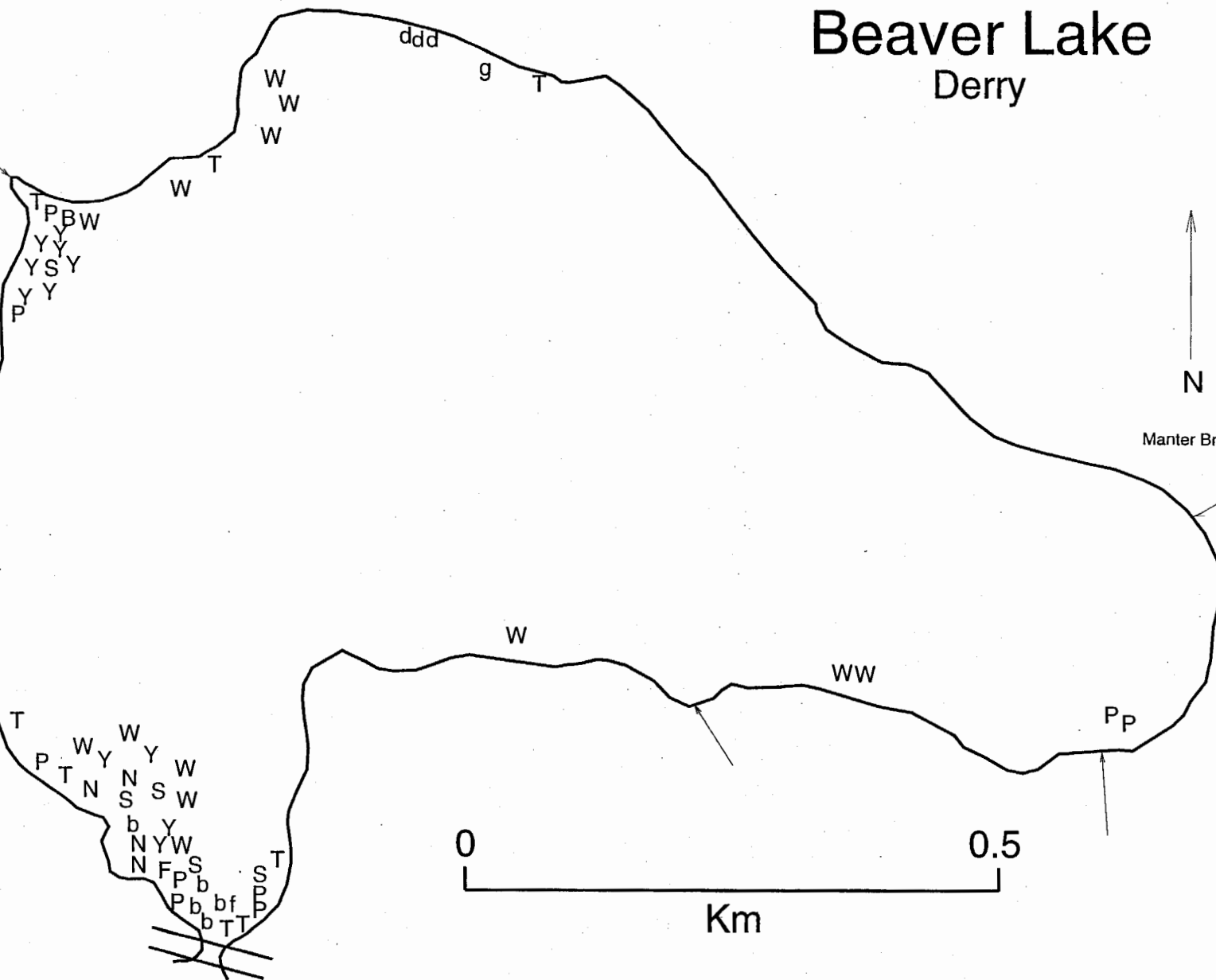
Jenny-Dickey Brook



Cat-O-Brook

Launch

TTT-38



AQUATIC PLANT SURVEY

LAKE: BEAVER LAKE	TOWN: DERRY	DATE: 06/29/1999
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[illegible]

OVERALL ABUNDANCE: Common

GENERAL OBSERVATIONS:

1. Plants appeared to be somewhat less abundant than in the previous surveys in the 1970s and 80s.
2. Sterile (non-flowering) thread-like leaves were common throughout the lake but are not listed above or depicted on the map.
3. Survey was conducted on an overcast day with poor water visibility. Submerged plants may have been more common than indicated, but were not visible from the boat.